

WHAT IS CLAIMED IS:

1. An apparatus including a distributed test equipment system for testing analog communications systems, comprising:

a packet-switched network interface including a first server connection node and a first client connection node for relaying a first plurality of packetized test commands and a first plurality of packetized signal data;

a first analog signal receiver responsive to a first analog signal received from a first external signal source by measuring said first analog signal and generating a first plurality of measurement data representing said first analog signal;

a first server coupled to said first server connection node and said first analog signal receiver, and responsive to said first plurality of packetized test commands by packetizing and transmitting, via said first server connection node, said first plurality of measurement data as said first plurality of packetized signal data; and

a first client computer including a first user interface, coupled to said first client connection node, responsive to a first plurality of user commands received via said first user interface by generating and transmitting said first plurality of packetized test commands, and further responsive to said first plurality of user commands and said first plurality of measurement data by processing said first plurality of measurement data to produce a first plurality of processed signal data representing a first plurality of characteristics of said first analog signal.

2. The apparatus of claim 1, wherein said packet-switched network interface comprises an interface for Transmission Control Protocol/Internet Protocol (TCP/IP) communication.

3. The apparatus of claim 1, wherein said first analog signal receiver comprises a radio frequency (RF) signal receiver which is responsive to a first RF signal as said analog signal by sampling said first RF signal at a plurality of selected time intervals to produce a first plurality of sampled RF signal data as said first plurality of measurement data.

4. The apparatus of claim 1, wherein said first server comprises a personal computer.

5. The apparatus of claim 1, wherein:  
said packet-switched network interface is further for relaying a second plurality of packetized test commands;  
said first server is further responsive to said second plurality of packetized test commands by providing a plurality of signal transmission data;  
said apparatus further comprises an analog signal transmitter coupled to said first server and responsive to said plurality of signal transmission data by generating a corresponding second analog signal; and  
said first client computer is further responsive to a second plurality of user commands received via said first user interface by generating and transmitting said second plurality of packetized test commands.

6. The apparatus of claim 1, wherein:  
said packet-switched network interface further includes a second client connection node and is further for relaying a second plurality of packetized test commands;  
said first server is further responsive to said second plurality of packetized test commands by providing a plurality of signal transmission data; and  
said apparatus further comprises  
an analog signal transmitter coupled to said first server and responsive to said plurality of signal transmission data by generating a corresponding second analog signal, and  
a second client computer, including a second user interface, coupled to said second client connection node, responsive to a second plurality of user commands received via said second user interface by generating and transmitting said second plurality of packetized test commands.

7. The apparatus of claim 1, wherein:

said packet-switched network interface further includes a second client connection node and is further for relaying a second plurality of packetized test commands and a second plurality of packetized signal data;

said first analog signal receiver is further responsive to said first analog signal received from said first external signal source by measuring said first analog signal and generating a second plurality of measurement data representing said first analog signal;

said first server is further responsive to said second plurality of packetized test commands by packetizing and transmitting, via said first server connection node, said second plurality of measurement data as said second plurality of packetized signal data; and

said apparatus further comprises a second client computer, including a second user interface, coupled to said second client connection node, responsive to a second plurality of user commands received via said second user interface by generating and transmitting said second plurality of packetized test commands, and further responsive to said second plurality of user commands and said second plurality of measurement data by processing said second plurality of measurement data to produce a second plurality of processed signal data representing a second plurality of characteristics of said first analog signal.

8. The apparatus of claim 1, wherein:

said packet-switched network interface further includes a second client connection node and is further for relaying a second plurality of packetized test commands and a second plurality of packetized signal data;

said apparatus further comprises

a second analog signal receiver responsive to a second analog signal received from a second external signal source by measuring said second analog signal and generating a second plurality of measurement data representing said second analog signal, and

a second server coupled to said second server connection node and said second analog signal receiver, and responsive to said second plurality of packetized test commands by packetizing and transmitting, via said second server connection node, said second plurality of measurement data as said second plurality of packetized signal data; and

said first client computer is further responsive to a second plurality of user commands received via said first user interface by generating and transmitting said second plurality of packetized test commands, and further responsive to said second plurality of user commands and said second plurality of measurement data by processing said second plurality of measurement data to produce a second plurality of processed signal data representing a second plurality of characteristics of said second analog signal.

9. An apparatus including a distributed test equipment system for testing analog communications systems, comprising:

packet-switched network means for relaying a first plurality of packetized test commands and a first plurality of packetized signal data;

first analog signal receiver means for measuring a first analog signal received from a first external signal source and generating a first plurality of measurement data representing said first analog signal;

first server means for receiving said first plurality of packetized test commands and in response thereto packetizing and transmitting said first plurality of measurement data as said first plurality of packetized signal data; and

first client computer means for receiving a first plurality of user commands via a first user interface and in response thereto generating and transmitting said first plurality of packetized test commands, and processing said first plurality of measurement data to produce a first plurality of processed signal data representing a first plurality of characteristics of said first analog signal.

10. The apparatus of claim 9, wherein:

said packet-switched network means is further for relaying a second plurality of packetized test commands;

said first server means is further for receiving said second plurality of packetized test commands and in response thereto generating a plurality of signal transmission data;

said apparatus further comprises analog signal transmitter means for receiving said plurality of signal transmission data and in response thereto generating a corresponding second analog signal; and

said first client computer means is further for receiving a second plurality of user commands via said first user interface and in response thereto generating and transmitting said second plurality of packetized test commands.

11. The apparatus of claim 9, wherein:

said packet-switched network means is further for relaying a second plurality of packetized test commands;

said first server means is further for receiving said second plurality of packetized test commands and in response thereto generating a plurality of signal transmission data; and

said apparatus further comprises

analog signal transmitter means for receiving said plurality of signal transmission data and in response thereto generating a corresponding second analog signal, and

second client computer means for receiving a second plurality of user commands via a second user interface and in response thereto generating and transmitting said second plurality of packetized test commands.

12. The apparatus of claim 9, wherein:

said packet-switched network means is further for relaying a second plurality of packetized test commands and a second plurality of packetized signal data;

said first analog signal receiver means is further for measuring said first analog signal and generating a second plurality of measurement data representing said first analog signal;

said first server means is further for receiving said second plurality of packetized test commands and in response thereto packetizing and transmitting said second plurality of measurement data as said second plurality of packetized signal data; and

said apparatus further comprises second client computer means for receiving a second plurality of user commands via a second user interface and in response thereto generating and transmitting said second plurality of packetized test commands, and for processing said second plurality of measurement data to produce a second plurality of processed signal data representing a second plurality of characteristics of said first analog signal.

13. The apparatus of claim 9, wherein:

said packet-switched network means is further for relaying a second plurality of packetized test commands and a second plurality of packetized signal data;

said apparatus further comprises

second analog signal receiver means for measuring a second analog signal received from a second external signal source and generating a second plurality of measurement data representing said second analog signal, and

second server means for receiving said second plurality of packetized test commands and in response thereto packetizing and transmitting said second plurality of measurement data as said second plurality of packetized signal data; and

said first client computer means is further for receiving a second plurality of user commands via said first user interface and in response thereto generating and transmitting said second plurality of packetized test commands, and for processing said second plurality of measurement data to produce a second plurality of processed signal data representing a second plurality of characteristics of said second analog signal.

14. A method for testing analog communications systems in a distributed testing environment, comprising:

- receiving a first plurality of user commands via a first computer user interface;
- generating a first plurality of packetized test commands in response to said first plurality of user commands;
- relaying said first plurality of packetized test commands via a packet-switched network;
- receiving a first analog signal from a first external signal source;
- measuring said first analog signal and generating a first plurality of measurement data representing said first analog signal;
- packetizing said first plurality of measurement data as a first plurality of packetized signal data in response to said first plurality of packetized test commands;
- relaying said first plurality of packetized signal data via said packet-switched network; and
- processing said first plurality of measurement data in response to said first plurality of user commands to produce a first plurality of processed signal data representing a first plurality of characteristics of said first analog signal.

15. The method of claim 14, further comprising:

- receiving a second plurality of user commands via said first computer user interface;
- generating a second plurality of packetized test commands in response to said second plurality of user commands;
- relaying said second plurality of packetized test commands via said packet-switched network;
- generating a plurality of signal transmission data in response to said second plurality of packetized test commands; and
- generating a corresponding second analog signal in response to said plurality of signal transmission data.

16. The method of claim 14, further comprising:  
receiving a second plurality of user commands via a second computer user interface;  
generating a second plurality of packetized test commands in response to said second plurality of user commands;  
relaying said second plurality of packetized test commands via said packet-switched network;  
generating a plurality of signal transmission data in response to said second plurality of packetized test commands; and  
generating a corresponding second analog signal in response to said plurality of signal transmission data.

17. The method of claim 14, further comprising:  
receiving a second plurality of user commands via a second computer user interface;  
generating a second plurality of packetized test commands in response to said second plurality of user commands;  
relaying said second plurality of packetized test commands via said packet-switched network;  
measuring said first analog signal and generating a second plurality of measurement data representing said first analog signal;  
packetizing said second plurality of measurement data as a second plurality of packetized signal data in response to said second plurality of packetized test commands;  
relaying said second plurality of packetized signal data via said packet-switched network; and  
processing said second plurality of measurement data in response to said second plurality of user commands to produce a second plurality of processed signal data representing a second plurality of characteristics of said first analog signal.

18. The method of claim 14, further comprising:  
receiving a second plurality of user commands via said first computer user interface;  
generating a second plurality of packetized test commands in response to said second plurality of user commands;  
relaying said second plurality of packetized test commands via said packet-switched network;  
receiving a second analog signal from a second external signal source;  
measuring said second analog signal and generating a second plurality of measurement data representing said second analog signal;  
packetizing said second plurality of measurement data as a second plurality of packetized signal data in response to said second plurality of packetized test commands;  
relaying said second plurality of packetized signal data via said packet-switched network; and  
processing said second plurality of measurement data in response to said second plurality of user commands to produce a second plurality of processed signal data representing a second plurality of characteristics of said first analog signal.